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ABSTRACT

In 1991, Massachusetts passed an interdistrict choice law that gave parents the option of enrolling their child in any district they selected. Six years later, David Armor and Brett Peiser conducted a study to examine the social, racial, and financial impact of the choice program on participating districts, and to determine if the thesis behind the market-competition model of education was being borne out in that state. This study updates the work done by Armor and Peiser. It gathers data for 2 additional years of the interdistrict choice program and similar data for the state's charter-school program as well. This update, for the most part, confirms the demographic findings of the initial study with regard to interdistrict choice. The racial impact on sending districts continues to be negligible. The impact on some of the receiving districts was to increase racial diversity; this positive effect continues and is increasing. Clearly, more minority students are taking advantage of the interdistrict choice program. Because many more districts are senders than are receivers, the financial losses are distributed more widely than the gains. Consequently, losses continue to amount to only very small portions of the operating budgets of even the highest sending districts, while the gains to some receiving districts are more substantial. The case-study districts used by Armor and Peiser to test the market competition thesis also continue to support their findings. Overall, the update confirms that the Massachusetts school-choice programs continue to benefit many while harming few. An appendix contains an evaluation of the author's draft paper. (DFR)

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COMPETITION IN EDUCATION
A 1999 UPDATE OF SCHOOL CHOICE IN MASSACHUSETTS

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A 1999 UPDATE OF SCHOOL CHOICE IN MASSACHUSETTS

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Pioneer Institute for Public Policy Research

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FOREWORD

In the two years since the original *Competition in Education* report was published, the school choice movement has continued its rapid and sometimes controversial expansion in response to strong parental demands for increased educational opportunities. These demands are not unique to Massachusetts; thoughout the nation the school choice movement continues to break new ground.

A voucher program was begun in Cleveland that includes private as well as religious schools. Florida has passed legislation that will give vouchers to students in failing public schools that can be used for private or parochial schools. Arizona charter schools are booming, with more than 270 in operation and more to come. The private scholarship initiative was given a enormous boost by the Children's Scholarship Fund, which was created by businessmen Ted Forstmann and John Walton, and to date has granted 40,000 scholarships to low-income students to help defray tuition costs at private or parochial schools in all 50 states. In Massachusetts, the charter school movement is the fastest-growing component of school choice, but when all choice components are added together, the number of students attending schools outside their resident districts totals nearly 20,000.

In this context of change, this update to *Competition in Education* is a welcome contribution that adds considerably to our knowledge of the consequences of school choice. The original report investigated the racial, social, and financial impacts of interdistrict choice in Massachusetts, and it also tested the market competition thesis—that competition could improve educational quality. It found that the racial and social impacts were minimal, but that school districts with the greatest losses had indeed responded, consistent with the market hypothesis, by improving their programs to attract students.

The update adds two additional years of enrollment and financial impact data, and it generally confirms and reinforces the conclusions in the original report. Most important, the school districts that had changed their policies in response to choice continue to reduce their enrollment and tuition losses. Several other districts that had not shown much improvement in 1996 have also begun to reverse their enrollment and tuition losses. In other words, the hypothesis that market forces can improve school programs as schools seek to win back lost students continues to be valid in Massachusetts.

An important new feature of the update is the inclusion of charter schools. Although there are no data here about how the sending districts are responding to losses to charter schools, given the size of the losses and given how the most heavily impacted schools responded in the interdistrict choice program, we would predict that some of these sending schools are in fact planning improvements. Further research is needed to test the response of the larger senders to charter schools.

Finally, this report includes a review by two critics of both this update and our earlier report, which deserves a comment or two. The critique is correct in that no data are presented about the impact of

choice losses on individual schools. Although it would be interesting to have this information, no such data are available in the state databases that we used for the study. We do not believe, however, that this omission in any way invalidates our conclusions about racial impacts. Most sending districts have only a single high school and one or two middle schools (which cover three-fourths of choice students). Consequently, a less than 1 percent change in white enrollment cannot have any significant impact on a single school.

The critique also argues that we cannot validate the market thesis without more evidence about academic improvements, particularly showing achievement gains by the transferring students. While we believe the original report contained ample documentation about the specific academic changes made to attract students (pp. 83-91), we reject the notion that student achievement gains must be part of any proof that market competition is working. There are many factors that affect academic achievement that districts cannot control. But districts *can* control the resources and programs that most parents see as the ingredients of quality. Changes in programs that bring parents and students back to a district are more than sufficient proof that competition has led to academic improvements.

While neither the original nor update reports are without some limitations, mostly stemming from the data available, we believe that the data presented here and in the original report are fully adequate for our two main conclusions: choice has not had adverse racial impacts in any Massachusetts district, and market competition has improved the quality of educational opportunities in many Massachusetts communities and for thousands of Massachusetts students.

David J. Armor is Research Professor at the Institute of Public Policy, George Mason University, and author of *Forced Justice: School Desegregation and the Law*.

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EXECUTIVE SUMMARY

In March 1991 Massachusetts passed an interdistrict choice law that gave parents the option of enrolling their child in any district they selected, provided that district had voted to receive students under the program. The tuition for that child would be deducted from the sending district's state aid and added to the receiving district's state aid. In 1997, David Armor and Brett Peiser conducted a study to examine the social, racial, and financial impact of the interdistrict choice program on participating districts and, secondly, to determine if the thesis behind the market competition model of education was being borne out in Massachusetts. Specifically, the Armor/Peiser study analyzed choice data through 1995-96 to determine whether districts would respond to a loss of students and dollars by modifying their programs in an effort to regain market share.

This study updates the work done by Armor and Peiser. The author gathered data for two additional years of the interdistrict choice program and similar data for the state's charter school program as well. This update, for the most part, confirms the demographic findings of the initial study with regard to interdistrict choice. The racial impact on sending districts continues to be negligible. The impact on some of the receiving districts was to increase racial diversity; this positive effect continues and is increasing. Clearly, more minority students are taking advantage of the interdistrict choice program.

Because many more districts are senders than are receivers, the financial losses are distributed more widely than the gains. Consequently, losses continue to amount to only very small portions of the operating budgets of even the highest sending districts, while the gains to some receiving districts are more substantial.

The case study districts used by Armor and Peiser to test the market competition thesis also continue to support their findings. They predicted that sending districts that experienced a significant loss of students and dollars would take steps to reverse those losses. Those senders that had begun to turn around their losses as of 1996 have since improved their positions even more dramatically; one of these districts has become a net receiver. Similarly, other large sending districts that lost more than 2 percent of their enrollments to interdistrict choice in 1994-95 have since reduced their losses.

From the financial data it is clear that only sending districts with spending above foundation budget levels have experienced significant enough negative effects from the interdistrict choice program to seek to regain their market share. Reimbursement for tuition losses to those districts spending below foundation budget levels has served to weaken the pressures of market competition on these districts.

Since the passage of the Education Reform Act of 1993, which included the charter school provisions, the number of charter schools has grown quickly; in 1998-99, 34 charter schools served 9,930 students. The racial and financial impacts of the charter school program are somewhat more difficult to

assess than those of interdistrict choice. The demographic profile of charter school students indicates that the program is benefiting those groups that have traditionally had few choices in education due to economic and residential mobility constraints. Unlike receiving district schools, which may draw small to moderate numbers of students from several nearby districts, charter schools typically draw several hundred students from one or a very small number of districts. A district that is doing moderately well may lose a few students to interdistrict choice, with little impact on its programs. If a charter school opens in or within proximity to a district, however, it may lose 10 or 15 percent of its students to that school. Six Massachusetts school districts have lost more than 5 percent of their operating budgets to charter schools. If the interdistrict choice conclusions can be generalized to charter schools, then this should spur those districts into action.

The policy recommendations of the Armor/Peiser study have, for the most part, not been adopted, and this is likely contributing to the slower growth of the interdistrict choice program. Although transportation for low-income students is fully reimbursable, participation as a receiver and advertising are still not mandatory for all districts. To date only about one-third of all districts participate as receivers. Restricting interdistrict choice to only the seats that are available in those 100 or so districts certainly limits student participation.

The equalization of spending among districts is nearly complete, and therefore it is now more important than ever that reimbursement of tuition lost to choice programs be discontinued. This would likely evoke more responsiveness by all districts to market pressure. As recommended in the initial study, an assessment of all fixed and variable education costs should lead to a more accurate marginal cost of educating one student.

Overall, this update confirms that the Massachusetts school choice programs continue to benefit many while harming few. Further, those that experience a negative impact appear to be modifying their programs in order to stem or reverse losses, a highly desirable consequence. As long as the benefits outweigh the costs, efforts should be taken to ensure that all students have access to interdistrict choice and charter schools.

COMPETITION IN EDUCATION
A 1999 UPDATE OF SCHOOL CHOICE IN MASSACHUSETTS

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I. INTRODUCTION

In March 1991 Massachusetts passed an interdistrict choice law that gave parents the option of enrolling their child in any district they selected, provided that district had voted to receive students under the program. The tuition for that child would be deducted from the sending district's state aid and added to the receiving district's state aid. Advocates of education reform have long proposed that a program such as this, in which districts must compete for students and dollars, would result in higher quality schools across the board.

In 1997 a study of the Massachusetts interdistrict choice law was conducted by David Armor and Brett Peiser for the Pioneer Institute for Public Policy Research.[1] The purpose of the study was to examine the social, racial, and financial effects of the interdistrict choice program on participating districts and, secondly, to determine if the thesis behind the market competition model of education was being borne out in Massachusetts.

An earlier study of the interdistrict choice program had indicated that, on average, the sending districts had higher levels of poverty and disproportionate numbers of minorities than the receiving districts, a situation that concerned critics of the program.[2] By examining the racial and social characteristics of each choice student, as well as the amount of tuition paid by each sending district to each receiving district, the Armor/Peiser study was able to make a clearer assessment of the impact of the interdistrict choice program. For the school year 1994-95 it was discovered that, although fewer choice students were minority and choice students were by and large more affluent than the average student of the districts they left, their leaving caused only small and insignificant effects on the racial composition and total operating budgets of the districts they left. However, the minority students that participated in the choice program actually improved the racial mix of the districts to which they transferred. For the purposes of this study, increasing racial diversity will be considered a *positive* racial impact. Similarly, the tuition received by the districts participating in interdistrict choice was often a large enough amount to have a significant, positive impact on the programs they were able to offer.

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[1] See David J. Armor and Brett M. Peiser, *Competition in Education: A Case Study of Interdistrict Choice* (Boston: Pioneer Institute for Public Policy Research, 1997).

[2] The earlier study was conducted on choice students in the fall of 1992 and examined the average family income, per pupil expenditures, and test scores for pairs of sending and receiving districts with 20 or more choice students transferring in or out.

The second set of conclusions drawn in the Armor/Peiser study related to the response of the largest sending districts to market competition. Case studies of the 10 largest receivers and the 10 largest senders were used to make these determinations. The largest senders were divided into those that did not send enough students to feel the impact ("No Effect Senders"), those that indicated through interviews that they did not intend to respond to the program ("No Change Senders"), and those that lost large numbers and felt a significant impact ("Change Senders"). By studying trend data on the number of students and amount of tuition dollars sent and received each year by each of these case study districts from 1992-93 to 1995-96, it became clear that the Change Senders were, in fact, modifying their programs and experiencing a turnaround in their numbers. In other words, they were responding as the market competition model predicted they would.

Although the results of the initial study largely supported the market competition thesis, and the negative impact on sending districts predicted by critics of the interdistrict choice program appeared to be largely insignificant, it remained to be discovered whether these conclusions would continue to hold as the program matured. Additionally, a second major choice program has become increasingly important in Massachusetts—charter schools. As the number of students choosing charter schools has increased, and has now passed the number of interdistrict choice students, the effects of this program must also be examined.

This paper is presented as a follow-up to the Armor/Peiser study. Since the release of the original analysis, two more years of data on choice students have become available. As this analysis of the social, financial, and racial factors is a snapshot look at the most recent data, it is necessary to determine whether the data for 1997-98 resemble those of two years earlier. Have the negative effects on the racial composition and operating budgets of the sending districts become greater, or are they still insignificant? Secondly, the trend charts used to prove the market competition thesis can now be appended to determine if the No Effect, No Change, and Change senders are still following the trajectories implied by the previous analysis.

In addition to updating the interdistrict choice study, this paper addresses the same issues for the charter school program. The high incidence of minority students attending charter schools and other unique characteristics of the program lead to different types of potential impact. The choice data and charter school data are therefore handled similarly, but separately.

This paper is arranged as follows. A brief description of the study design, largely reiterating the information in the original study, is followed by an analysis of the social, racial, and financial characteristics of students in both the interdistrict choice and charter school programs as of 1997-98.

See Richard Fossey, "Open Enrollment in Massachusetts: Why Families Choose," *Educational Evaluation and Policy Analysis*, Vol. 16, No. 3 (Fall 1994).

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These characteristics are examined according to several types of categories, including district size, percent of choice transfers, percent minority, and percent living in poverty.

The next section analyzes recent data on the interdistrict choice students from the original case study districts and discusses the trends in choice transfers, for both students and dollars, and whether or not these trends continue to support the market competition thesis. In addition, a trend analysis is performed on the districts that transferred more than 100 students at the time of the first study. Lastly, 12 case studies of charter school sending districts are examined. These are the districts that lost more than 2.5 percent of their student populations to charter schools. Although there are no trend or survey data available at this time on the districts that are losing students to charter schools, demographic and financial data are used to estimate the likelihood that those districts will feel compelled to try to regain their market share. The concluding section details the policy implications of this study.

II. Study Background and Design

This section will briefly review the laws that govern the Massachusetts interdistrict choice program and charter school program, paying special attention to the revisions made since their enactment. Additionally, this section describes the data and approaches used to determine the social, racial, and financial effects and to test the market competition thesis.

The Massachusetts Choice Law

Enacted in 1991, the Massachusetts interdistrict choice law is fairly straightforward. Parents are allowed to enroll their children in any district that has voted to be a receiving district and that has space available.[3] Tuition was originally to be paid to the receiving district by the sending district in an amount equal to the average per-pupil expenditure in the receiving district for the previous year. Transportation to and from school is available at no cost to low-income students through reimbursement by the state to either the school district or the parent.[4]

The financial details of the interdistrict choice law have become more complex since the law was enacted. The law was changed in 1992 to allow districts to be reimbursed for up to 50 percent of the tuition they were required to send. A second change caps tuition transfers at only 75 percent of actual per-pupil operating expenditures in the receiving district, up to a limit of $5,000.[5]

[3] As of 1994 school districts are required to vote each year as to whether they will continue to participate as receiving districts.
[4] Districts that provide transportation to low-income interdistrict choice students receive reimbursement from the state at 150 percent of their average per-student transportation charges. Parents can either receive a transportation voucher to pay for a private carrier or can apply for reimbursement from the state at the rate of $0.28 per mile.
[5] Districts that receive special education students continue to be reimbursed at 100 percent of costs.

Finally, in the Education Reform Act of 1993, a foundation budget was established that delineated minimum spending levels per student for various categories of expenditures. Districts that were spending below foundation levels at that time were awarded state aid to bring them up to the proper level within seven years. In addition, below foundation districts were reimbursed for 100 percent of the interdistrict choice tuition assessed for the previous year. This reimbursement remains in place today, although in most cases this is an offset to the total foundation aid a district receives. There is no longer any interdistrict choice tuition reimbursement for above foundation districts. These reimbursement provisions, while achieving the intended equalization of spending across the state, have weakened the financial impact of market competition on the sending districts.

THE MASSACHUSETTS CHARTER SCHOOL LAW

Charter schools became a reality in Massachusetts with the passage of the 1993 Education Reform Act. Among other things, this law authorized the establishment of up to 25 charter schools, a number that has since been r evised to 50.[6] Although independent of the traditional public school system, charter schools are not allowed to discriminate against any students and may not charge tuition. Like interdistrict choice, charter schools receive their funds from the state aid of the sending district, limited to a total loss of 6 percent of their total net school spending.

Districts that lose students to charter schools are reimbursed by the state for some or all of the tuition paid and, as in interdistrict choice, the provisions for reimbursement are complex.[7] Below foundation districts were reimbursed for close to 100 percent of the anticipated tuition for school years 1995-96 through 1997-98. During this same period, above foundation districts were reimbursed for 60 percent of the actual tuition for students attending a charter school in its first year of operation and 40 percent for students attending charter schools in their second or third year of operation. From this point forward, however, districts will only be reimbursed for increases in total charter school tuition paid over the previous year. This reimbursement occurs on a declining schedule for three years following the increase. Of course, subsequent increases could occur during each of these years, which would then have their own reimbursement schedules. Finally, districts are reimbursed for the first year's tuition of any student coming from a private school or home school. For the purposes of this analysis, only the local tuition payments will be considered.[8]

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[6] Of the 50 total charter schools, 37 slots are reserved for "Commonwealth" charter schools that have their charters granted by the state and the other 13 are for "Horace Mann" charter schools that receive their charters with prior approval from the local school committee and teachers' union.

[7] All of the information regarding tuition reimbursement can be found on the Massachusetts Department of Education web site at www.doe.mass edu.

[8] It should be noted that after the first year of the program a provision was added to the law to limit the loss of state aid to those districts that had large initial losses to charter schools. It was determined that those districts that lost more than 5 percent of their

SUMMARY OF STUDY DESIGN

This section will briefly review the data used for the initial study and discuss any additional data gathered for this update. Portions of the original analysis were not replicated, as some of the descriptive data, such as suspension rates, are no longer collected, and the community data, drawn from the 1990 census, were deemed to be outdated. Secondly, it was determined that some of the achievement and survey data collected for the Armor/Peiser study would not be gathered for this paper.[9] Even with these changes, however, the purpose of the study remains to assess the social, racial, and financial impact and test the market competition thesis.

Social, Racial, and Financial Effects

The data used to assess the social, racial, and financial effects of interdistrict choice and charter schools come from two sources. The first of these are the district and charter school profiles. The files, obtained from the Massachusetts Department of Education, list, among other things, the total enrollment, the percent of enrollment by race, the percent of students receiving free or reduced lunch, attendance rates, dropout rates, and post-graduate plans of high school seniors. The 1997-98 profiles are used in section IV to provide a snapshot of these characteristics for the entire school system, for the sending and receiving districts, and for the charter schools. In addition, MCAS scores were obtained for each school district.[10] The purpose of the comparison of SES and academic characteristics between the groups is to try to assess the predominant rationale behind a parent's decision to use interdistrict choice or charter schools.

The second data source is the "choice" and "charter" student data files, also obtained from the Massachusetts Department of Education. These files list the race, sending district, receiving district or charter school, grade, and tuition paid for each student that participates in either program. These data are used to assess the effects of interdistrict choice and charter schools on the sending districts, by comparing their racial composition and financial status with and without the choice students.

The Market Competition Thesis

The market competition model predicts that public schools, when subjected to the competitive forces of a marketplace, will respond like businesses that have to compete for customers. The purest form of this model is a voucher system, in which parents and students can select from among any school, public or private, and the government pays the tuition. Critics of voucher programs argue that the students

operating expenses the first year would not be allowed to lose more than an additional 3 percent in subsequent years. In other words, if a district lost 10 percent of its budget to charter schools in the first year it could not lose more than 13 percent of its state aid to charter school tuition in any year thereafter.

[9] Changes in the statewide testing program made collection and analysis of data impractical at this time.

[10] MCAS is the statewide testing program recently adopted in Massachusetts. The 1997-98 school year is the first for which scores are available.

left behind in the public schools will be the most difficult to educate, attending schools that are under-funded and under-staffed. Advocates of school choice contend that schools will respond to the market pressure by improving the programs they offer and trying to regain the students and dollars lost. Interdistrict choice and charter schools, while not private schools, provide parents and students with another choice within the public school system, generating internal competition. Schools face the threat that parents will vote with their feet and take students and tuition dollars elsewhere in the public school system.

In order to determine if Massachusetts school districts were behaving in accordance with the market competition thesis, the Armor/Peiser study selected 20 case study school districts—the 10 largest net receiving districts and the 10 districts that sent the most students. Each of these districts (except one sending district) was visited and surveyed for the original study. Based on the answers to survey questions, the 10 sending districts were subdivided into the following three categories:

1) "No Effect" districts did not feel a negative impact from the program and thus had no plans to change their programs in response.

2) "No Change" districts had not yet come to a conclusion about whether or not they were being adversely effected and therefore had not yet developed a plan for responding.

3) "Change" districts were most negatively affected, either in terms of students or dollars, and viewed interdistrict choice as a wake-up call to improve their programs and get their students back.

Based on these categorizations it was predicted that the No Effect districts would experience smaller relative losses that would remain basically level throughout the duration of the program. The No Change districts, it was predicted, would have somewhat larger losses. Finally, it was expected that the Change districts would have the largest initial losses, but would regain at least some of the students as they began to modify their programs in response. In fact, when the number of net transfers was plotted for each of the groups for the first four years of the program, this is precisely what transpired.

In order to substantiate this finding the other districts that lost more than 100 students to interdistrict choice were tracked for the same time period. The results of this analysis confirmed the case study findings in that a loss threshold of 2 percent could be inferred, beyond which districts would begin to react. Districts that lost more than 2 percent of their student populations responded and began to regain students in the out years, while the districts that lost less than 2 percent kept their losses level throughout.

Due to the lack of longitudinal data on the charter schools and their surrounding communities, testing the market competition thesis for charter schools by trend analysis is not practical at this time. However, a comparison of several characteristics of the charter schools and the districts from which they draw their students may indicate whether the presence of a charter school is likely to cause a school

district to respond. This will be done by assessing the percentage of students and dollars being lost to charter schools in relation to the loss thresholds for interdistrict choice.

III. Trends in Choice and Charter School Participation

When assessing the participation rates in Massachusetts choice programs it is necessary to look at each program individually, as well as at the programs combined. Although current participation rates in the programs are nearly equal in terms of numbers of students, participation rates are being driven by different factors.

Trends in Interdistrict Choice

The interdistrict choice program in Massachusetts continues to grow slowly as it enters its eighth year, although the program is still not close to its statutory limit of 19,000 students. Approximately 500 new students have joined the program each year in the last three years for which data are available. Table 1 shows the number of students participating in the program, as well as the number of receiving and sending districts. The data for 1998-99 are based on statewide totals, rather than the student choice files.

Since the program's inception the number of receiving districts has more than tripled and the number of sending districts has more than doubled. Currently, 254 districts participate in the program as sending or receiving districts, which represents nearly 75 percent of the 347 total Massachusetts districts. In terms of the dispersion of choice students between districts, the numbers have changed slightly in the past two years. There are now 27 districts receiving more than 100 choice students. Within this group are 12 districts receiving more than 150 students each and accounting for more than one-third of all choice students. Similarly, there are 18 districts transferring out more than 100 students, with the 8 largest sending nearly one-quarter of all choice students.

Table 1. Trends in Choice/Charter Students and Districts

Year	Interdistrict Choice Students	Receiving Districts	Sending Districts	Charter School Students	Charter Schools	Sending Districts	Total Students
1991-92	1,000	32	116				1,000
1992-93	3,657	64	192				3,657
1993-94	5,111	73	199				5,111
1994-95	6,219	85	219				6,219
1995-96	6,793	89	206	2,608	15	N/A	9,401
1996-97	7,150	100	233	5,329	22	133	12,479
1997-98	7,638	109	248	6,621	24	149	14,259
1998-99	7,212*	N/A	N/A	9,930	34	N/A	17,142

* The measure is Full-Time Equivalents, rather than actual students, as the student file was not available at the time of this analysis. This is an increase of approximately 400 FTEs from 1997-98. Therefore, it is likely that actual students increased by a similar amount.

The demographics of the interdistrict choice student population remain largely unchanged from the initial study of the program. In 1997-98, 55 percent of the choice transfers were high school students, 18 percent were middle school students, and 27 percent were elementary school students. They continue to be evenly divided by gender.

The total tuition payments in 1997-98 were $31.2 million. The relationship between sending and receiving districts continues to hold, with the sending districts losing on average $127,000 while the receiving districts gain, on average, $286,000.

Trends in Charter Schools

As was previously mentioned, participation rates in the charter school program are driven by different factors than interdistrict choice. Although the program started out with more students in its first year than interdistrict choice, and grew at a faster rate, the number of participants was initially constrained by the limit of 25 charter schools. This limit has now been raised to 50, and consequently there were 9,930 students attending 34 charter schools in 1998-99, with 5,660 students on waiting lists. As charter schools face the same total student statutory limit as interdistrict choice (2 percent of the total student population, or approximately 19,000 students), it is possible that this may affect charter school participation rates sooner than interdistrict choice.

Slightly less than half of all school districts send students to charter schools—149 in 1997-98 (see table 1). However, when the interdistrict choice and charter school programs are combined, the total number of sending or receiving districts is 288. This translates to a total participation rate in the two choice programs of 83 percent of all districts.

The concentration of sending districts for the charter school program is greater than it is for the interdistrict choice program. Over 80 percent of all charter school students come from 11 school districts. Boston and Springfield stand out particularly in this regard, as they sent 1,585 and 904 students, respectively, to charter schools in 1997-98. These numbers, although large, still represent less than 5 percent of the total student population in each of those districts. On the other hand, several districts, namely Hull, Up-Island Regional, and Nauset, lost 10 percent or more of their student populations to charter schools. These are relatively small districts that face unique geographic constraints. Consequently, the opening of a charter school in such districts can have a comparatively large impact. Their reactions to the loss of students to a charter school merits further study.

Another dissimilarity between charter school students and interdistrict choice students is the breakdown by grade. Charter school students are predominantly from the elementary grades, 57 percent in 1997-98, as opposed to the high concentration of interdistrict choice students in the high school grades. In fact, only 13 percent of charter school students are in high school.

Finally, in terms of tuition, the average charter school tuition paid by sending districts was $294,000. Like interdistrict choice, this represents an average loss of less than 1 percent of a district's operating expenditures. Seven districts lost more than 5 percent of their operating expenditures—among them Hull, Up-Island Regional, and Nauset.

Trends in the Case Study Districts

The 10 receiving districts selected for the original interdistrict choice case study were those that received more than 100 students, and the sending districts were those that sent most of the students to these receivers. These same districts were used for the update, although in some cases the situations have changed sufficiently to exclude a district, such as Marblehead's decision to stop being a receiving district in 1995-96.

Table 2. Interdistrict Choice Case Study Districts

District	Choice In 1994-95 (number)	*Choice In 1994-95 (%)*	Choice In 1997-98 (number)	*Choice In 1997-98 (%)*	Choice Out 1994-95 (number)	*Choice Out 1994-95 (%)*	Choice Out 1997-98 (number)	*Choice Out 1997-98 (%)*	District Enrollment 1994-95	District Enrollment 1997-98
NET RECEIVERS										
Acton-Boxborough	284	*14.8*	244	*11.8*	11	*0.6*	14	*0.7*	1,920	2,060
Avon	228	*28.7*	212	*26.7*	0	*0.0*	0	*0.0*	795	793
Harvard	183	*17.5*	164	*14.2*	0	*0.0*	21	*1.8*	1,047	1,159
Holliston	313	*10.6*	272	*8.7*	13	*0.4*	13	*0.4*	2,964	3,135
Lunenburg	133	*7.4*	108	*5.9*	39	*2.2*	61	*3.3*	1,786	1,829
Manchester	138	*16.1*	161	*17.5*	8	*0.9*	4	*0.4*	857	921
Marblehead	140	*5.0*	68	*2.5*	1	*0.0*	4	*0.1*	2,776	2,749
Uxbridge	136	*7.1*	142	*6.3*	46	*2.4*	51	*2.3*	1,920	2,263
Hampden-Wilbraham	107	*3.2*	88	*2.5*	2	*0.1*	4	*0.1*	3,352	3,540
Pentucket	198	*6.6*	134	*4.0*	52	*1.7*	52	*1.6*	3,011	3,336
NET SENDERS										
Brockton	0	*0.0*	0	*0.0*	188	*1.3*	183	*1.1*	14,346	16,015
Fitchburg	66	*1.3*	184	*3.3*	187	*3.7*	199	*3.5*	5,024	5,644
Gloucester	0	*0.0*	29	*0.7*	145	*3.7*	130	*3.2*	3,869	4,034
Haverhill	26	*0.3*	75	*0.9*	154	*1.9*	143	*1.7*	7,930	8,542
Hopkinton	36	*1.9*	20	*0.9*	98	*5.2*	59	*2.5*	1,895	2,329
Leominster	65	*1.2*	56	*0.9*	171	*3.0*	304	*5.0*	5,642	6,076
Lynn	0	*0.0*	0	*0.0*	154	*1.2*	91	*0.6*	13,125	14,742
Maynard	33	*2.5*	33	*2.2*	135	*10.4*	94	*6.3*	1,301	1,493
Northbridge	79	*3.9*	127	*5.4*	105	*5.2*	105	*4.5*	2,020	2,334
Springfield	0	*0.0*	21	*0.1*	258	*1.1*	276	*1.1*	24,063	24,835

Similarly, Springfield and Gloucester, two of the four districts that had voted against being receiving districts at the time of the Armor/Peiser study, have since changed their positions. This has lowered the net losses for both of these districts. All but one (Leominster) of the other net sending

districts have reduced the number of net transfers. As will be discussed in section V, this is directly in line with what advocates of the choice program predicted.

In addition to the case study districts, the original study examined the other districts that transferred out more than 100 students. These districts were used for a special trend analysis to test the robustness of the case study findings. Table 3 lists these nine districts with their transfers for 1994-95 and for 1997-98. Only one of the four districts in this group that had decided not to be receivers has since changed its status—Pittsfield. Similar to the case study districts, six of the nine have reduced their net losses since 1994-95.

Table 3. Other Interdistrict Choice Sending Districts With 100+ Choice Out

District	Choice In 1994-95 (number)	*Choice In 1994-95 (%)*	Choice In 1997-98 (number)	*Choice In 1997-98 (%)*	Choice Out 1994-95 (number)	*Choice Out 1994-95 (%)*	Choice Out 1997-98 (number)	*Choice Out 1997-98 (%)*	District Enrollment 1994-95	District Enrollment 1997-98
Amesbury	83	*3.1*	110	*3.9*	142	*5.2*	183	*6.5*	2,709	2,800
Ayer	73	*5.3*	164	*14.5*	105	*7.6*	97	*8.6*	1,389	1,130
Clinton	40	*2.2*	82	*4.4*	102	*5.6*	113	*6.0*	1,807	1,879
Lowell	0	*0.0*	0	*0.0*	152	*1.*	121	*0.7*	14,693	16,280
Milford	105	*2.7*	120	*3.0*	120	*3.1%*	147	*3.7*	3,828	3,972
Pittsfield	0	*0.0*	71	*1.0*	113	*1.6*	154	*2.2*	6,854	6,956
Salem	0	*0.0*	0	*0.0*	104	*2.2*	63	*1.3*	4,757	5,024
Worcester	0	*0.0*	0	*0.0*	109	*0.5*	147	*0.*	22,568	23,965
Triton	103	*3.4*	170	*4.9*	219	*7.2*	236	*6.9*	3,032	3,441

Table 4 lists the sending districts selected for the charter school case studies. Generally, these districts lost between 2.8 percent and 11.4 percent of their student populations to charter schools. Table 4 lists the main charter school that received students from those districts. In several instances, such as Boston, a district sent students to multiple charter schools. However, for the case study districts at least 50 percent of students transferring out, and in many cases 100 percent, went to one school.

The last six districts on the chart are small districts, mostly from Martha's Vineyard and Cape Cod. These districts have been included because, even though the absolute number of students they lost is not large, the percentage of students exceeds the 5 percent level. Furthermore, Martha's Vineyard represents a unique situation, in that the geographical constraint of being on an island makes participation in interdistrict choice impractical. The parents who started the school, in fact, indicated that one major factor in their decision to open a charter school was to provide them with an on-island choice. A similar location constraint affects Truro, as it is on the far eastern end of Cape Cod.

Table 4. Largest Sending Districts to Charter Schools, 1997-98

Sending District	Number Out to Charter Schools	Total District Enrollment	Percent Out to Charter Schools	Main Charter School	Number Out to Main Charter School
Boston	1,560	61,823	2.5	Boston Renaissance	1,117
Springfield	903	23,778	3.8	Sabis International	762
Worcester	694	23,121	3.0	Seven Hills	694
Lawrence	488	11,458	4.3	Community Day	290
Fall River	402	11,814	3.4	Atlantis	402
Somerville	393	5,633	7.0	Somerville	383
Cambridge	209	7,523	2.8	Benjamin Banneker	177
Franklin	185	4,771	3.9	Benjamin Franklin	185
Hull	169	1,486	11.4	South Shore	169
Chelmsford	162	5,404	3.0	Chelmsford Alliance	161
Nauset	132	1,632	8.1	Cape Cod Lighthouse	132
Marblehead	95	2,721	3.5	Marblehead Community	95
Williamsburg	12	237	5.1	Hilltown	12
Truro	8	148	5.4	Cape Cod Lighthouse	8
Up-Island Regional	49	453	10.8	Martha's Vineyard	49
Tisbury	22	389	5.7	Martha's Vineyard	22
Martha's Vineyard	15	673	2.2	Martha's Vineyard	15
Edgartown	15	429	3.5	Martha's Vineyard	15

IV. Assessing the Impact of Choice

Social and Racial Effects

When assessing the impact of the Massachusetts choice programs, two questions must be asked: Do the positive effects outweigh the negative effects? and Who is feeling the effects most significantly? At the time of the Armor/Peiser study, a comparison of socioeconomic (SES) and academic statistics of sending and receiving interdistrict choice districts, according to the percent of students transferring in or out, led to the conclusion that there was little difference between the groups. Although the receiving districts were slightly more affluent and less minority than the sending districts, none of the differences was significant. However, a similar comparison between the sending and receiving *case study* districts indicated that substantial differences in socioeconomic and academic characteristics did exist for these groups.

This section will revisit those comparisons using 1997-98 data. Table 5 lists the SES and academic data for the districts participating in interdistrict choice. In order to control for the size of the district, the comparison is divided between those districts that sent or received less than 2 percent of their

student population and those that sent or received more than 2 percent. In addition, there is a column for all districts participating in the interdistrict choice program.

Table 5. Characteristics of All Interdistrict Choice Sending and Receiving Districts, 1997-98

	Rate of Choice Transfers		
	Under 2%	2% or more	All participating districts
SENDING DISTRICTS			
SCHOOL SES			
% Poverty	16	17	16
% Minority	8	4	7
% Black	4	2	3
ACADEMIC			
% Attending	94	94	94
% Dropout	10	10	10
% Planning to Attend 4-Year College	49	43	47
10th Grade Language Arts	234	235	234
10th Grade Math	226	225	226
(N)	188	56	244
RECEIVING DISTRICTS			
SCHOOL SES			
% Poverty	19	13	15
% Minority	7	4	5
% Black	3	2	2
ACADEMIC			
% Attending	94	95	94
% Dropout	12	7	9
% Planning to Attend 4-Year College	45	52	49
10th Grade Language Arts (MCAS)	233	237	235
10th Grade Math (MCAS)	223	228	226
(N)	38	71	109

The differences in school SES characteristics between all senders and receivers remain unchanged from 1994-95 to 1997-98. There continue to be small differences in poverty (16 percent for senders versus 15 percent for receivers), minorities (7 percent for senders versus 5 percent for receivers), and blacks (3 percent for senders versus 2 percent for receivers).

The academic characteristics of senders and receivers are very similar. The only exception to this is that the receivers have slightly lower dropout rates and larger percentages of seniors planning to attend a four-year college. The MCAS scores of the senders and receivers are virtually the same.

Examining these differences by relative numbers of transfers, however, shows the districts sending the largest percentages of students continue to be slightly higher in poverty than the other sending districts. Interestingly, however, they are lower in both minorities (blacks and Hispanics) and blacks only. This runs counter to critics' claims that interdistrict choice will cause "white flight." The academic characteristics between the two types of sending districts are virtually equal, although a smaller number of seniors from the larger sending districts plan to attend four-year colleges.

The receiving districts also exhibit some differences when separated into groups based on relative numbers transferred. Not only are the districts that receive less than 2 percent of their students from interdistrict choice higher in poverty and minorities than the larger receivers, they also exceed the average for all receivers. The academic characteristics of this group, however, are essentially the same as all of the other districts. The only group that really stands out on table 5 is districts that receive more than 2 percent. This group has lower percentages of poverty, minorities, and blacks than all of the other groups. Additionally, the academic characteristics are more favorable, with higher attendance and lower dropout rates, as well as higher percentages planning to attend a four-year college. The MCAS scores are also slightly higher for this group than the average.

None of the differences in table 5 are large enough to make them significant. While this makes it difficult to interpret the motivations behind those students participating in interdistrict choice, it also serves to refute the claims of critics that the white, affluent, and academically talented students will flee the poorer performing schools in large numbers, leaving them worse off than before.

Table 6. Characteristics of Interdistrict Choice Case Study Sending and Receiving Districts, 1997-98

	Sending Districts	Receiving Districts
SCHOOL SES		
% Poverty	34	5
% Minority	24	3
% Black	10	2
ACADEMIC		
% Attending	93	95
% Dropout	16	5
% Planning to Attend 4-Year College	50	71
10th Grade Language Arts (MCAS)	229	240
10th Grade Math (MCAS)	218	232
(Number of districts)	(10)	(10)

As was the case in the Armor/Peiser study, the differences between the sending and receiving *case study* districts is much more noticeable. Table 6 indicates that the 10 sending districts in the case study are much higher than the 10 receiving districts in percent poverty (34 percent versus 5 percent), percent minority (24 percent versus 3 percent), and percent black (10 percent versus 2 percent).

Additionally, the academic characteristics of the case study receiving districts are more favorable than the sending districts. Although the attendance rates are about the same, the dropout rate for receiving districts is only 5 percent, compared to 16 percent for sending districts, and 71 percent plan to attend a four-year college, compared to 50 percent. The MCAS scores for the case study receiving districts are also higher than the sending districts, as well as higher than the average for all districts.

The first issue to be addressed regarding the racial impact of interdistrict choice is a comparison of the race of participating students to the statewide student population. Charter school students are included in this comparison, but students in the METCO program are not.[11]

Table 7 lists the racial composition for interdistrict choice students, charter school students, and the two groups combined. The numbers are compared to the statewide racial composition and the state less Boston. The state less Boston column is the proper comparison group for interdistrict choice, since Boston students do not participate. Due to its large size and the predominance of minorities, Boston tends to have a comparatively higher effect on the statewide numbers than other districts. Boston does participate in the charter school program, however, so both comparisons are necessary.

Table 7. Racial Composition of Choice Populations Compared to Statewide Public School Enrollment, 1997-98

	Interdistrict Choice	Charter School	All Choice	State	State Less Boston
White	88	52	71	78	82
Black	3	26	14	9	6
Hispanic	4	18	10	10	9
Asian	1	2	2	4	4
Other	<1	1	<1	<1	<1
Unknown	-	2	1	-	-
(N)	(7,638)	(6,939)	(14,577)	(916,927)	(855,104)

In 1994-95 the interdistrict choice students were 92 percent white, 2 percent black, and 2 percent Hispanic. Those numbers have since changed to 88 percent white, 3 percent black, and 4 percent Hispanic, indicating that more minorities are taking advantage of the program. Nonetheless, the interdistrict choice students continue to be disproportionately white relative to the statewide population.

When Boston is removed, the interdistrict choice students are closer to the minority averages, and the gap has been reduced since 1994-95.

Compared to the statewide population, however, it has been well documented that charter schools are serving a disproportionate number of minority students. In fact, only about one-half of charter school students are white. Combining interdistrict choice students and charter school students yields an interesting result as well. A disproportionate number of the nearly 15,000 students who have chosen to participate in these two programs are minority, relative to the statewide population of students, with or without Boston. Taken together, these two programs of choice appear to be adequately serving the minority students of Massachusetts.

To determine the correlation between a district's racial or poverty composition and its participation in interdistrict choice, the net transfers were calculated for each district. Thus, receiving districts gain more students than they lose and sending districts lose more students than they gain. The districts were then broken out into several racial and poverty categories.

Figure 1. Effect of Interdistrict Choice on Enrollment Net Gain/Loss as Percent of Enrollment by District Composition

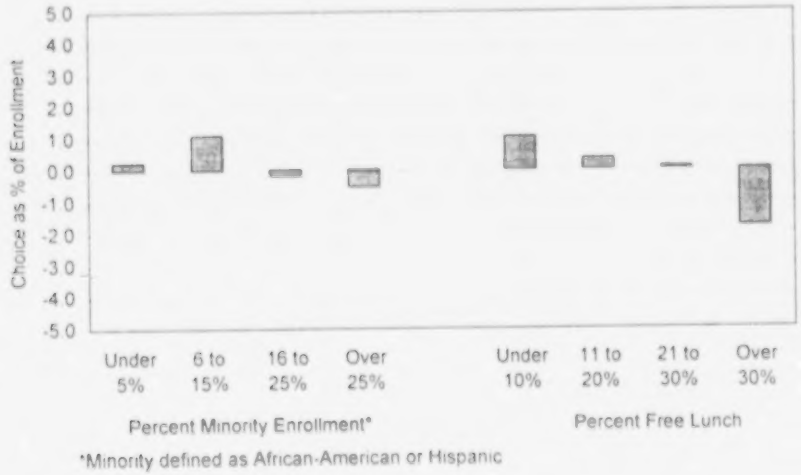


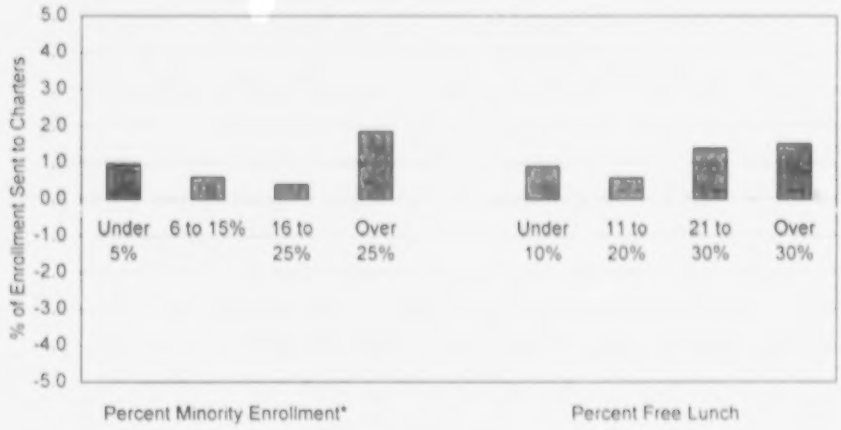
Figure 1 shows that those districts with higher than 15 percent minority enrollment or 31 percent of its students receiving free or reduced price lunch tend to be net sending districts. The poverty numbers have changed from 1994-95, when districts with more than 20 percent poverty were senders. Similarly, in 1994-95 the receiving districts were concentrated in the under 5 percent minority range, whereas now they are predominantly in the 6 to 15 percent minority range. Lastly, it should be noted that in the

[1] METCO, Metropolitan Council for Educational Opportunity, is a program that allows minority students in Boston and

Armor/Peiser analysis the correlation between choice patterns and race was stronger than the correlation between choice patterns and poverty. Now the situation is reversed. Regardless, the total number of students transferring under interdistrict choice remains quite small, with the largest effect still being less than 2 percent of the sending district's enrollment.

Figure 2 is a similar analysis for charter schools, taking into account the fact that districts are only senders, not receivers. Although the categories used are the same, it must be noted that the charter school program is quite different in that, although the highest percentage of transfers comes from the highest minority districts (over 25 percent), the transfers themselves are over-representative of minorities, relative to statewide averages. Another difference between charter schools and interdistrict choice is that the transfers are much more evenly divided between the poverty categories. Again, the numbers of transfers as a percent of total enrollment is small, and therefore any effects are likely to be insignificant overall.

Figure 2. Effect of Charter Schools on Enrollment Loss as Percent of Enrollment by District Composition



* Minority defined as African-American or Hispanic

It is necessary to examine this issue in greater detail by looking at the race of the interdistrict choice and charter school students and assessing the impact of their decisions to transfer out of their resident districts and into the districts or charter schools they selected. This is done by taking the actual racial composition for each district, adding back in any students that transferred out (by race), removing any students that transferred in (by race), and then calculating the resident racial composition of the

Springfield to attend a school in one of the surrounding suburban districts.

16

district without the choice program.[12] Comparing this resident population without choice to the actual population with choice will indicate the racial impact of each of the two programs. As the racial composition of the students in each program is different, the programs will continue to be addressed separately.

The interdistrict choice receivers in figure 3 are broken out by the size of the district, in order to account for the fact that the average percent transferred is quite small. The most important point to note for the receivers is that interdistrict choice broadens the racial composition of the smallest receiving districts. Their resident populations are predominantly white, and by receiving minority students, the percentage of blacks and Hispanics increases. This same pattern holds across each of the size categories for the most part, although to a smaller degree. Still, none of the changes in racial composition are greater than 0.8 percent in either direction.

Figure 3. Effect of Interdistrict Choice on Composition of Receivers
Change in Percent of White, Black, Hispanic

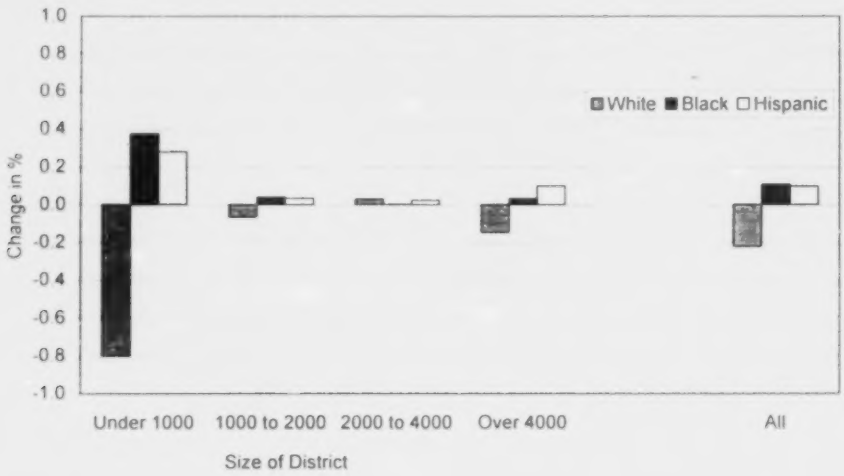


Figure 4 shows the same analysis for interdistrict choice senders. The direction of change is the same as it is for receiving districts, although at smaller absolute levels. This is due in part to the fact that there are more sending districts than there are receiving districts. Therefore, the smallest sending districts lose, on average, less than 0.3 percent of their white students and increase their percentages of black and Hispanic students by less than 0.1 percent and 0.15 percent, respectively. As these represent the largest effects, the impact on the racial composition of sending districts is quite small. In addition, the effects on

[12] The percent of each race that comprises the student population of a district is contained in the School District Profiles published annually by the Massachusetts Department of Education. Those students whose race data were missing were assumed to be white. The actual number is obtained by multiplying these percents by the total enrollment.

the receiving districts are larger than the effects on the sending districts. Finally, this analysis was performed for the 149 districts that sent students to charter schools. The first item to note in figure 5 is that the effects are smaller for charter schools than they are for interdistrict choice.

Figure 4. Effect of Interdistrict Choice on Composition of Senders
Change in Percent of White, Black, Hispanic

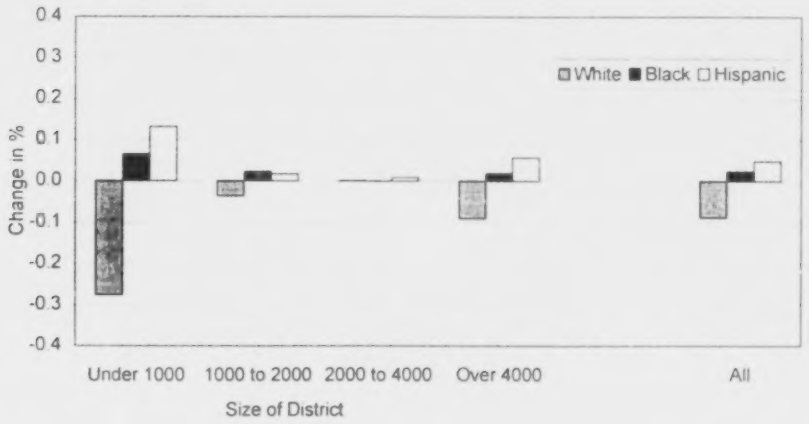
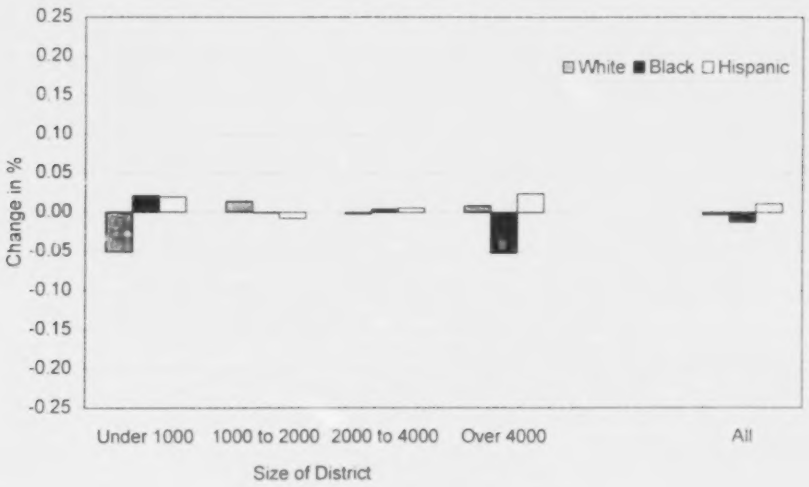


Figure 5. Effect of Charters on Composition of Senders
Change in Percent of White, Black, Hispanic



Secondly, the overall impact is greatest with respect to black students, in that the sending districts have less black students after the charter school students leave. There is a 0.02 percent increase in the

Hispanic student population. The smallest and largest districts are disproportionately affected, particularly for blacks. The effects on the largest category (districts with more than 4,000 students) are primarily due to Springfield and Boston, which sent 313 and 1024 black students to charter schools, respectively in 1997-98.

Table 8. Racial/Ethnic Impact of Interdistrict Choice for Largest Senders and Receivers 1997/98

District	Number of transfers	Actual % Minority*	% Minority Without Choice	Change in Minority
SENDERS WITH MORE THAN 100 TRANSFERS OUT				
Leominster	304	19.0	19.0	0.0
Springfield	276	70.3	69.6	0.7
Triton	236	1.3	1.3	0.0
Fitchburg	199	31.5	31.1	0.4
Amesbury	183	1.5	1.4	0.1
Brockton	183	48.7	48.5	0.2
Pittsfield	154	9.9	9.8	0.1
Milford	147	8.0	7.7	0.3
Worcester	147	36.7	36.5	0.2
Haverhill	143	16.1	16.0	0.1
Gloucester	130	3.1	3.1	0.0
Lowell	121	25.3	25.1	0.2
Douglas	120	0.2	0.4	-0.2
Clinton	113	20.4	19.4	1.0
Lawrence	106	81.1	80.4	0.7
Northbridge	105	3.4	3.6	-0.2
RECEIVERS WITH MORE THAN 100 TRANSFERS IN				
Newburyport	285	2.3	2.4	-0.1
Holliston	272	2.3	2.3	0.0
Acton-Boxborough	244	2.7	2.8	-0.1
Avon	212	14.1	6.9	7.2
Nashoba	198	3.9	4.2	-0.3
Fitchburg	184	31.5	31.1	0.4
Triton	170	1.3	1.3	0.0
Hamilton-Wenham	170	1.2	1.4	-0.2
Harvard	164	1.7	1.5	0.2
Ayer	164	18.4	17.6	0.8
Manchester	161	0.8	0.4	0.4
Quabbin	143	1.7	1.6	0.1
Uxbridge	142	0.9	0.9	0.0
Pentucket	134	1.8	1.8	0.0
Berkshire Hills	128	4.4	5.0	-0.6
Northbridge	127	3.4	3.6	-0.2
Hudson	125	3.7	3.7	0.0
Milford	120	8.0	7.7	0.3
Southwick-Tolland	117	2.9	2.9	0.0
Southern Berkshire	112	2.3	1.9	0.4
Amesbury	110	1.5	1.4	0.1
Lunenburg	108	2.1	2.2	-0.1
Granby	104	1.0	1.1	-0.1
Lenox	103	0.7	0.9	-0.2

*Minority defined as African-American or Hispanic.

As the changes in racial composition are very small on average across all categories, it is useful to also look at individual districts to discover where the impact is being felt. Table 8 lists the 16 districts that transferred out more than 100 students and the 24 districts that transferred in more than 100 students, exclusive of any vocational-technical districts. From this table it can be seen that the largest senders have greater concentrations of minorities than do the largest receivers. Interdistrict choice, for the most part, alters the racial composition very little.

For some of the largest sending districts, such as Springfield, Lawrence, and Brockton, that have high resident minority population, interdistrict choice increases the percent minority. In each of the cases, the size of the change is less than 1 percent. Nine of the 24 largest receiving districts broadened their racial composition by virtue of transferring in even small numbers of students. Avon stands out particularly in this aspect, as its percent minority increased from 6.9 to 14.1 as a result of interdistrict choice. According to data collected at the time of the Armor/Peiser study, most of the students transferring to Avon come from Brockton. The effect on Brockton's racial composition remains negligible while the effect on Avon has grown.

Table 9. Racial/Ethnic Impact of Charter Schools for Largest Senders, 1997-98

District	Number of transfers	Actual % Minority*	% Minority Without Charter Schools	Change in Minority
Boston	1,560	74.4	74.5	-0.1
Springfield	903	70.3	70.2	0.1
Worcester	694	36.7	36.8	-0.1
Lawrence	488	81.1	81.3	-0.2
Fall River	402	8.7	8.7	0.0
Somerville	387	33.6	33.6	0.0
Franklin	185	1.4	1.4	0.0
Hull	169	2.3	2.4	-0.1
Cambridge	167	48.6	49.4	-0.8
Chelmsford	162	1.4	1.4	0.0
Nauset	132	1.8	1.7	0.1
Marblehead	95	3.4	3.3	0.1
Up-Island Regional	49	1.7	1.7	0.0
Tisbury	22	7.5	7.1	0.4
Edgartown	15	5.3	5.1	0.2
Martha's Vineyard	15	5.8	5.7	0.1
Williamsburg	12	0.4	0.4	0.0
Truro	8	3.0	2.8	0.2

*Minority defined as African-American or Hispanic.

Overall, the racial composition of the highest sending and receiving districts does not follow any pattern that would suggest that students are trying to escape from high minority districts to low minority districts. Districts such as Triton and Amesbury have very small resident minority populations and yet are

some of the largest senders. Conversely, Fitchburg and Ayer have relatively high minority concentrations but are some of the largest receivers.

As would be expected from figure 5, the effects of the charter school program are smaller than the effects of interdistrict choice. Table 9 lists those districts that lost more than 2.5 percent of their enrollment to charter schools. According to these data, those districts that have the highest concentration of minorities, namely Boston, Springfield, Worcester, Somerville, and Cambridge, experienced positive changes in racial composition after the charter school program was enacted. Generally speaking, however, none of the changes is large enough to be considered significant. Even though some of the districts lost large numbers of students to charter schools, relative to interdistrict choice, these are primarily the largest districts and, consequently, the effects remain negligible.

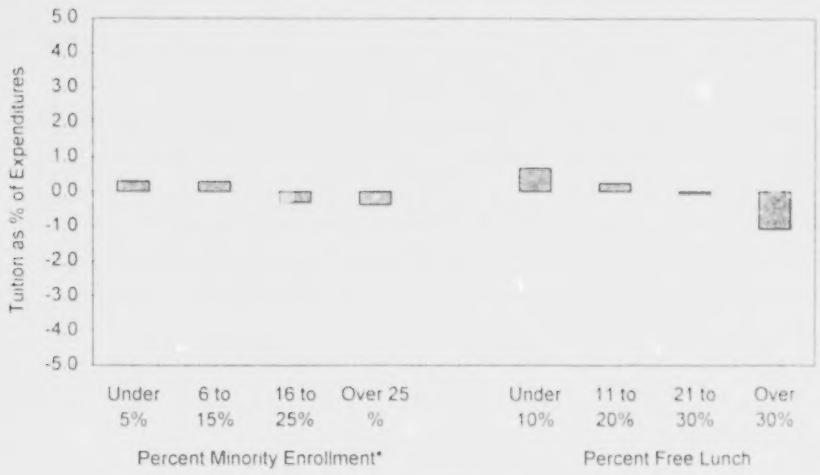
Financial Impact

Having examined the racial impact of the Massachusetts choice programs, it is now time to turn to the financial impact. The concern voiced by critics of choice programs is that they will drain funds from the districts that need them most and, in the case of interdistrict choice, send them to the districts that need them least. In order to determine if this is the case, the total tuition sent or received by each district for interdistrict choice and charter school students (net after state aid and reimbursements) was calculated as a percent of that district's total operating expenditures. These percentages were then averaged over the same racial and poverty categories used in the previous analysis.

Interdistrict Choice

Figure 6 contains the data for interdistrict choice, which follow essentially the same pattern as the net gain/loss of students as a percent of enrollment. As in that analysis it is important to remember that the losses are dispersed over more districts than the gains. Consequently, the losses cause only a small negative impact on most districts' operating budgets, while the gains have a greater positive impact. Compared to the findings of the Armor/Peiser study, the net losses are more concentrated in the highest poverty districts, but more evenly spread among the minority categories. Regardless, the average effects continue to be around the 1 percent level.

Figure 6. Effect of Interdistrict Choice on Expenditures
Net Tuition Payments as Percent of Expenditures by District Composition



*Minority defined as African-American or Hispanic

Turning again to the districts that sent or received more than 100 students, table 10 indicates that the tuition dollars lost by the senders do not represent a significant portion of the total operating expenditures for most of these districts. The largest relative loss is from Douglas (6.2 percent), which, ironically, has the lowest poverty rate of the sending districts. The largest loss in absolute dollars, however, is from Springfield, which lost over $1.0M in tuition revenue. Clinton and Leominster, two districts with poverty rates of approximately 30 percent, also experienced relatively large losses, 3.3 and 3.1 percent, respectively.

On the other hand, the tuition received by those districts with more than 100 transfers in amounts to, on average, a much larger percentage of their operating budgets. In the case of Avon, the tuition received is 20 percent of the budget. Almost $1.0M of Avon's $5.0M budget came from interdistrict choice students. This is similar to the situation at the time of the Armor/Peiser study. Manchester and Harvard also received large percentages of their budgets (13.5 and 8.6 percent) from net transfers. Finally, it is worth noting that since 1994-95, Lenox, Acton-Boxborough, Holliston, Newburyport, Hamilton-Wenham, and Granby increased their net tuition revenue by more than 5 percent of their operating expenditures. Some of the largest receiving districts at the time of the Armor/Peiser study have since dropped off this list—namely Marblehead, Hampden-Wilbraham, and Masconomet.

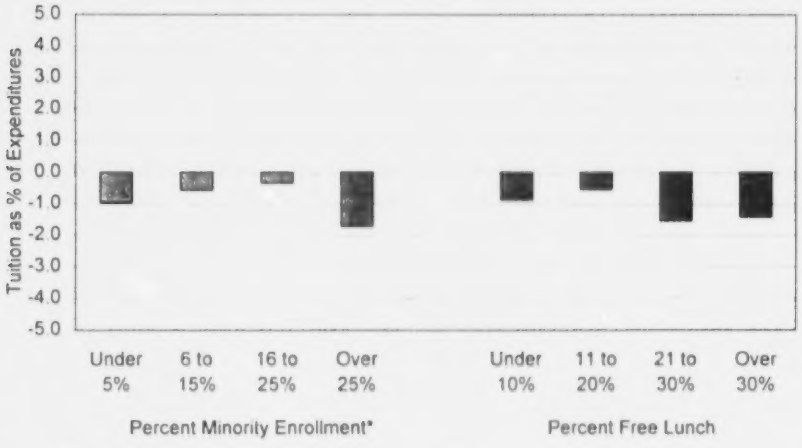
Table 10. Financial Impact of Interdistrict Choice for Largest Senders and Receivers - 1997-98

District	Poverty Rate (%)	Tuition Received ($000)	Tuition Paid ($000)	Operating Expenditure ($000)	Net Change as % of Expenditure
SENDERS WITH MORE THAN 100 CHOICE TRANSFERS OUT ($000)					
Douglas	8	57	405	5,637	-6.2
Clinton	32	271	599	9,889	-3.3
Leominster	27	184	1,185	32,797	-3.1
Triton	14	536	1,005	17,023	-2.8
Gloucester	21	110	660	23,876	-2.3
Amesbury	17	403	663	15,860	-1.6
Pittsfield	33	249	661	41,671	-1.0
Brockton	54	0	791	97,287	-0.8
Haverhill	27	232	578	45,885	-0.8
Springfield	76	64	1,157	152,607	-0.7
Lawrence	73	0	404	71,441	-0.6
Fitchburg	50	529	693	32,212	-0.5
Worcester	46	0	616	148,737	-0.4
Lowell	57	0	417	101,060	-0.4
Milford	18	453	506	24,105	-0.2
Northbridge	21	427	347	11,460	0.7
RECEIVERS WITH MORE THAN 100 CHOICE TRANSFERS IN					
Avon	12	925	0	4,616	20.0
Manchester	6	1,019	13	7,474	13.5
Harvard	1	691	89	6,962	8.6
Lenox	9	495	95	6,526	6.1
Acton-Boxborough	1	976	62	15,272	6.0
Holliston	2	1,075	62	16,980	6.0
Newburyport	6	1,237	296	16,627	5.7
Hamilton-Wenham	4	836	74	13,506	5.6
Granby	10	296	0	5,394	5.5
Ayer	24	772	366	8,818	4.6
Nashoba	6	1,099	322	18,298	4.2
Southwick-Tolland	14	413	19	10,486	3.8
Uxbridge	11	449	174	10,009	2.8
Quabbin	16	494	106	15,852	2.4
Southern Berkshire	21	485	349	6,531	2.1
Pentucket	5	470	214	18,004	1.4
Berkshire Hills	16	541	381	12,572	1.3
Lunenburg	4	321	210	9,289	1.2
Northbridge	21	427	347	11,460	0.7
Hudson	11	463	387	16,381	0.5
Mendon-Upton	4	295	256	8,892	0.4
Milford	18	453	506	24,105	-0.2
Fitchburg	50	529	693	32,212	-0.5
Amesbury	17	403	663	15,860	-1.6
Triton	14	536	1,005	17,023	-2.8

Charter Schools

The charter school program seems to be having a more significant financial impact, on average, on the sending districts than interdistrict choice, although the amounts are still only a small portion of total operating expenditures. Figure 7 indicates that the districts with the highest concentration of minorities sent, on average, almost 2 percent of their budgets to charter schools. Similarly, the districts with the highest concentrations of poverty sent between 1 and 1.5 percent.

Figure 7. Effect of Charter Schools on Expenditures
Net Tuition Payments as Percent of Expenditures by District Composition



*Minority defined as African-American or Hispanic

Looking at the 12 districts that experienced the greatest losses of students to charter schools, as a percentage of their total enrollment, table 11 shows, again, that the losses are larger than those for interdistrict choice. Two of these districts lost more than 5 percent of their operating budgets, including Hull which lost 10.6 percent.

The largest losses, however, are not concentrated in the highest poverty districts, other than Somerville and Lawrence. All but one of the districts with a poverty rate higher than 30 percent had losses that were lower than the average loss of 4 percent. This is due in part to the fact that these are also some of the largest districts and, therefore, they can absorb higher absolute losses. However, it also runs counter to the claim that the charter school program will pull significant money away from the districts that can least afford it.

At the bottom of table 11 are the small districts that experienced large losses in the percentage of students enrolled, even though the losses were not large in absolute terms. The financial losses to these districts are also disproportionately large. Three of the six districts had losses greater than 4 percent of

their operating budgets. Further investigation is necessary to determine how well smaller districts such as these are able to manage losses of this magnitude.

Table 11. Financial Impact of Charter Schools for Largest Senders, 1997-98

District	Poverty Rate (%)	Charter School Tuition Paid Out* ($000)	Operating Expenditures ($000)	Net Change As % of Expenditures
Hull	29	870	8,246	-10.6
Nauset	10	840	11,801	-7.1
Somerville	70	2,074	41,763	-4.9
Franklin	4	850	24,246	-3.5
Marblehead	7	626	18,421	-3.4
Lawrence	73	2,373	71,441	-3.3
Fall River	51	1,926	71,746	-2.7
Springfield	76	4,014	152,607	-2.6
Cambridge	31	1,957	81,354	-2.4
Chelmsford	4	737	31,738	-2.3
Worcester	46	3,312	148,737	-2.2
Boston	70	9,202	501,879	-1.8
Up-Island Regional	8	44	4,241	-1.0
Truro	27	65	727	-8.9
Tisbury	18	177	3,266	-5.4
Williamsburg	15	52	1,081	-4.8
Edgartown	15	113	3,583	-3.2
Martha's Vineyard	6	176	7,106	-2.5

*Net of state reimbursements

The racial and financial impacts of the charter school program are somewhat more difficult to assess at this time. The high participation rate of minority and low-income students indicates that the program is benefiting those groups that have traditionally had few choices in education due to economic and residential mobility constraints. Although the change in the racial composition of the sending districts is negligible, the financial impact is more significant. Further study is needed to determine how these districts are dealing with the losses. The next section addresses this issue for interdistrict choice—namely the reaction of districts to the loss of students and dollars.

V. The Market Competition Thesis and School Choice

The theory states that public schools, when subjected to the competitive forces of a marketplace, will respond like businesses that have to compete for customers. In the case of interdistrict choice, public schools face the threat that parents will vote with their feet and take students and tuition dollars elsewhere in the public school system. Likewise, charter schools provide parents and students with a choice within the public school system. School districts that suffer significant losses of students or funds to either of

these programs must develop mechanisms to improve their programs if they want to regain their market share.

Approach and Data for Testing the Thesis

After examining the social, racial, and financial effects of the two choice programs, we turn to a test of the market competition thesis to determine whether the conclusions drawn in the original study continue to hold. To do this, data from the original 20 interdistrict choice case study districts are reviewed to determine how they have been affected in the last two years and how they have responded. In addition, the other districts that were sending more than 100 students in 1994-95 are examined to see if they responded in a manner similar to the case study districts. Finally, per-pupil expenditures are compared for each of the categories of case study sending districts.

Results for Interdistrict Choice Case Study Districts

One of the purposes of this update is to determine if the trends discovered in the first study continue to hold. This requires looking at the same groups of school districts, calculating their net transfers for the last two years, and appending the original data with this information. Table 12 lists the net transfers of students and tuition for the senders, by category of sender.

Change senders have continued to respond to their initial losses by reducing their net transfers. All three have reduced their losses by significant amounts. District 1 has reduced its losses by 61 percent and District 2 by 52 percent. District 3 has actually gone from being a net sender to being a net receiver.

Some of the No Change and No Effect senders have also begun to reduce their losses. In the No Change category, District 4 has reduced its losses by 30 percent since 1994-95. District 5 has made even more improvement, reducing its losses by 90 percent from the lowest point in 1995-96. This is due in part to the fact that the district voted to be a receiving district. On the other hand, District 6, the remaining No Change district, has actually increased its losses almost twofold since 1993-94.

In the No Effect category District 7 stands out, as it has reduced its losses significantly. A staff person in that district's Superintendent's office, when contacted by telephone, indicated that, although philosophically against the program initially, the district decided that in order to "survive" it would need to become a receiver. Additionally, while the district had very little space available in the early years, construction of four new state-of-the-art elementary schools made the district very attractive to choice students. In other words, the reduction of losses was only partially due to market pressures. Losses have also been reduced by District 8. This is due, in part, to the fact that the main district to which students were transferring decided to stop being a receiving district three years ago. The smaller reduction in losses for District 9 is most likely due to the decision to become a receiving district.

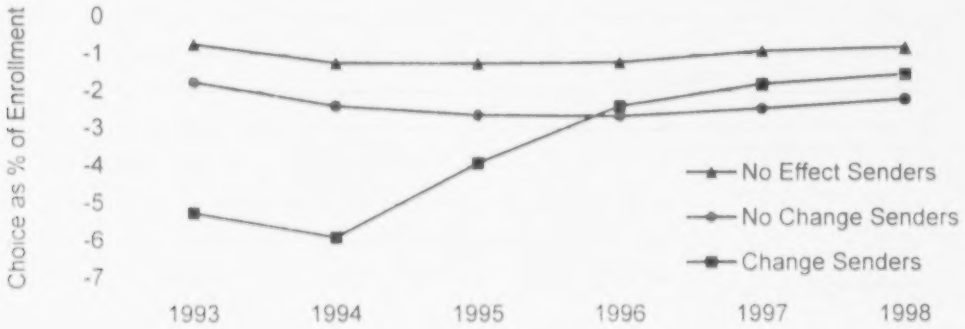
Table 12. Trends in Interdistrict Choice Enrollment and Tuition Payments

Type of Sender	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	% Reduction from year of peak loss
NET ENROLLMENT CHANGES							
CHANGE GROUP							
District 1	-100	-81	-62	-51	-43	-39	61
District 2	-103	-126	-102	-76	-63	-61	52
District 3	-43	-91	-26	+12	+16	+22	100
NO CHANGE GROUP							
District 4	-141	-139	-145	-129	-106	-101	30
District 5	-1	-58	-121	-146	-106	-15	90
District 6	-81	-137	-106	-122	-176	-248	0
NO EFFECT GROUP							
District 7	-78	-151	-128	-114	-82	-68	55
District 8	-59	-74	-154	-147	-128	-91	41
District 9	-158	-284	-258	-292	-222	-255	13
District 10	-141	-166	-188	-190	-186	-183	4
NET TUITION CHANGES, $000							
CHANGE GROUP							
District 1	-343	-247	-219	-196	-204	-179	48
District 2	-417	-542	-423	-378	-294	-222	59
District 3	-156	-255	-156	-110	-78	80	131
NO CHANGE GROUP							
District 4	-655	-567	-655	-568	-529	-550	16
District 5	-42	-179	-359	-506	-449	-164	68
District 6	-283	-434	-385	-449	-717	-1001	0
NO EFFECT GROUP							
District 7	-255	-475	-454	-422	-311	-346	27
District 8	-244	-286	-598	-652	-570	-466	29
District 9	-480	-976	-955	-1118	-925	-1123	0
District 10	-566	-699	-739	-831	-717	-791	5

Although each of the categories of case study senders has experienced some change from the time of the Armor/Peiser study the trends in the net transfers as a percent of total enrollment have not. Figure 8

clearly shows that the Change senders have continued to improve their situations. In 1994 they lost, on average, 6 percent of their student populations to interdistrict choice, which was more than twice the losses of the other two categories of senders. Indeed, 1994 appears to have been a turning point for these districts.

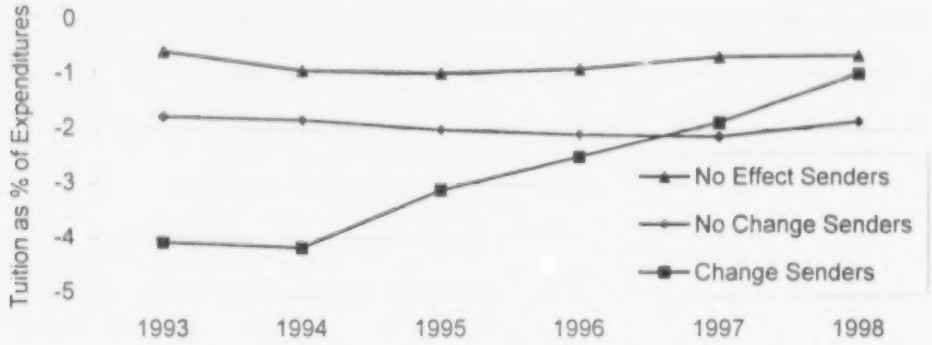
Figure 8. Trends In Interdistrict Choice Enrollment as Percent of Total Enrollment for Case Study Senders



The No Effect senders hit a low point the same year, although it was just slightly above 1 percent of their total enrollment. In the subsequent years they have improved slightly and now transfer less than 1 percent. The No Change senders did not begin to turn around until 1996, and as of last year they were still transferring out a higher percentage of their students than were the Change senders.

Figure 9 examines the financial data from the same perspective as the student loss data and shows the tuition losses as a percent of total expenditures for each of the categories of senders. At the time of the Armor/Peiser study the Change and the No Change senders were converging at a loss of around 2 to 2.5 percent. Within the last two years this has changed, such that the No Change senders are now losing more, on average, than the Change senders. The Change senders have reduced their average losses from more than 4 percent to only 1 percent. The No Change senders, while not much worse off than when the program began, have not improved their positions either. Similarly, the No Effect senders have maintained losses at between 0.5 and 1 percent.

Figure 9. Trends in Tuition Gains/Losses Interdistrict Choice for Case Study Senders



The trends in both enrollment and tuition losses validate the categorization of the senders that was based strictly on survey data. Indeed, the Change senders appear to have felt a significant impact and made the changes necessary to increase their market share. The No Effect senders continue to feel little impact and, thus, have not had a need to change. Finally, the No Change senders continue to fall somewhere in the middle, although it appears that they may be slowly making a transition to being Change senders. More importantly, each of these reactions supports the market competition thesis.

Choice Trends in Other Large Senders

As the test of the market competition model in the Armor/Peiser study was based on only 10 sending districts, the findings were substantiated by examining enrollment trends for the other net sending districts that lost more than 100 students in the 1994-95 school year. These are the same districts listed in table 3. In order to categorize these districts according to their likelihood to change, a threshold of net transfers of 2 percent of total enrollment was used. If the thesis of the original study is correct, those districts losing less than 2 percent of their enrollment should respond like the No Effect senders, while those losing more than 2 percent should respond like Change senders.

Table 13 lists the nine districts according to the category they fell into at the time of the Armor/Peiser study. According to the data, the senders that were losing more than 2 percent of their enrollment at that time have greatly reduced their losses in the last two years. Ayer has experienced the biggest turnaround, eliminating its losses entirely. In fact, for the last two years Ayer has been a net receiving district. For three of the five districts, Clinton, Salem, and Triton, 1996 was the year in which their losses were the greatest. Since then, each of these districts has basically cut its losses in half. Finally, Amesbury, although it has reduced its losses slightly in the past year, has seen its position decline from being a net receiver in 1993 to having the highest number of net transfers out in 1998 for this group.

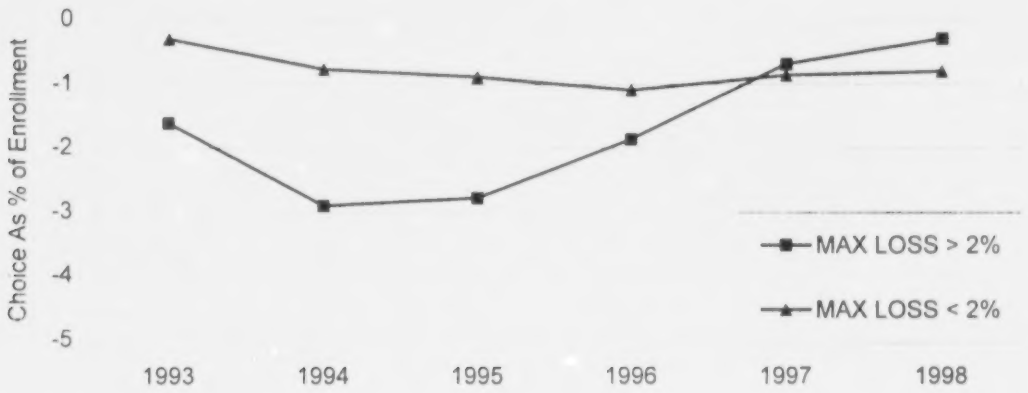
Table 13. Trends in Interdistrict Choice Enrollment for Other Sending Districts With 100+ Choice Out in 1995

District	1993	1994	1995	1996	1997	1998	% Reduction from year of peak loss
SENDER LOSS >2% OF ENROLLMENT							
Amesbury	26	-63	-59	-44	-80	-73	9
Ayer	-100	-87	-32	-15	54	67	167
Clinton	-23	-41	-62	-32	-32	-31	50
Salem	-24	-56	-104	-80	-70	-63	39
Triton		-67	-116	-96	-87	-66	43
SENDER LOSS <2% OF ENROLLMENT							
Lowell	-56	-142	-152	-160	-132	-121	24
Milford	6	-22	-15	-41	-43	-27	37
Pittsfield	-46	-72	-113	-111	-67	-83	27
Worcester	-59	-93	-109	-137	-139	-147	-6

Most of the districts that transferred less than 2 percent of their student populations in 1994-95 have also reduced their losses in the past few years, although not to the degree of the other group. Lowell, Milford, and Pittsfield have since reduced their losses by about one-third. Of these three, only Pittsfield has decided to become a receiving district. On the other hand, Worcester, one of the few in this group that is still not a receiver, continues to show increasing losses.

Looking at these relative losses graphically (figure 10) shows that districts in the higher impact group (losses >2 percent) have significantly reversed their positions. For each of the last four years this group has reduced net losses—from 3 percent in 1994 to less than 0.5 percent in 1998. The lower impact group (losses <2 percent) has also improved. As of the Armor/Peiser study it seemed as though these districts were on a trajectory to continue losing higher percentages of students each year. In the last two years, however, they appear to have turned this around, although they are still not back to where they started.

Figure 10. Trends In Interdistrict Choice Enrollment for Other Senders With 100+ Choice Out in 1995



Like the 10 case study districts, these districts appear to be responding to the loss of students and dollars in accordance with the market competition model. Those that experienced the most significant impacts have taken steps to stop the flow of students from their districts, while those that did not feel as much of an effect have been slower to react. The fact that the districts in the lower impact group in figure 10 and the No Change Senders in figure 8 have begun to reduce their losses may be an indication that the threshold is lower than originally estimated.[11] While the Change senders and higher impact senders were clearly beyond the threshold and responded relatively quickly, those in the middle may simply have needed more evidence.

Impact on Per-Pupil Expenditures

Although it can be uncomfortable for a district to lose students to other districts and it may not like the negative image that results from such losses, it is the financial losses that are most likely to evoke a response. The complicated reimbursement program for interdistrict choice and the Chapter 70 foundation budget program have greatly reduced the financial impact for some sending districts. It is likely that some districts may not feel compelled to take steps to reduce their losses until they have to start paying for them.

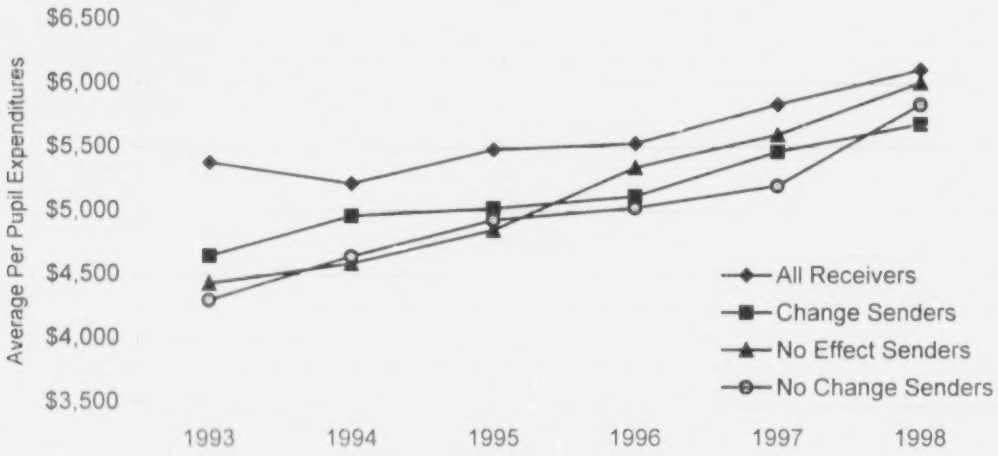
Of the 10 case study districts two of the Change senders had budgets that were above the foundation level established by the Education Reform Act, meaning they are no longer reimbursed for any losses due to choice. On the other hand, the three No Effect districts and two of the three No Change

[11] Another possible explanation for the reaction of the No Change senders is that their budgets finally exceeded the foundation level and they are no longer being reimbursed for their losses.

districts are below foundation and have had their losses offset by increasing state aid. The foundation aid is now being phased out and the tuition reimbursement, while still given at 100 percent for below foundation districts, will disappear once districts reach their foundation budgets. This may account for the later responses of the No Effect and No Change groups.

A major objective of the Education Reform Act was to equalize per-pupil spending across the state. The Armor/Peiser study determined that the per-pupil expenditures were, in fact, converging for each of the case study sending categories, as well as for receivers as a whole. Figure 11 updates this analysis and indicates that the categories are now very close. The $1,300 difference between all receivers and the lowest spending group of senders in 1993 had been reduced to a $500 difference.

Figure 11. Trends in Per Pupil Expenditures for Interdistrict Choice Case Study Senders



Additionally, the positions of the three sending groups have changed. The Change senders originally had the greatest level of expenditures among the senders, and they now have the lowest. The No Effect senders, all of whom began below foundation, are now the highest spending group, even though they have not reduced their losses significantly. Lastly, the No Change senders have moved up from being the lowest spending group to the middle.

Clearly, the foundation budget program is reaching its goal of equalizing spending. At the same time, however, it is tempering the market effects of the interdistrict school choice program by mitigating the negative financial impact of the loss of students.

Charter School Case Study

Although 12 districts have been selected for a case study of charter school sending districts, it is difficult to draw many conclusions at this time regarding their reactions to the loss of charter school

students and tuition. As more longitudinal data become available it will be evident whether any trends are being established by these districts to get their students back.

If interdistrict choice can be used as guide, however, it is possible to determine how many districts, if any, are finding themselves in the same position of the case study Change districts. This section will look at the charter school case study sending districts and compare their losses to the initial losses experienced by the interdistrict choice Change sending districts.

Although the division of the interdistrict choice case study senders into categories was based solely on survey data, the average losses of students and dollars by the three groups was extremely consistent with the categorization. The Change districts, for instance, experienced losses of students that were, at their maximum, almost three times that of the No Change senders and four times that of the No Effect senders. The turnaround in numbers that they eventually experienced occurred when their average losses hit the statutory limit of 6 percent. The secondary test of the market competition thesis using the other sending districts that lost more than 100 students revealed a lower loss threshold of 3 percent. It should be noted that these thresholds are likely an overstatement, as it assumes that a district is able to react quickly enough to turn programs around in the 12 months after reaching the highest level of loss. A more realistic view would be that the threshold was hit the previous year, which in both the Change districts and other large sending districts would be a lower loss threshold.

Figure 12. Charter School Students Sent as a Percent of Total Enrollment for Case Study Districts, 1997-98

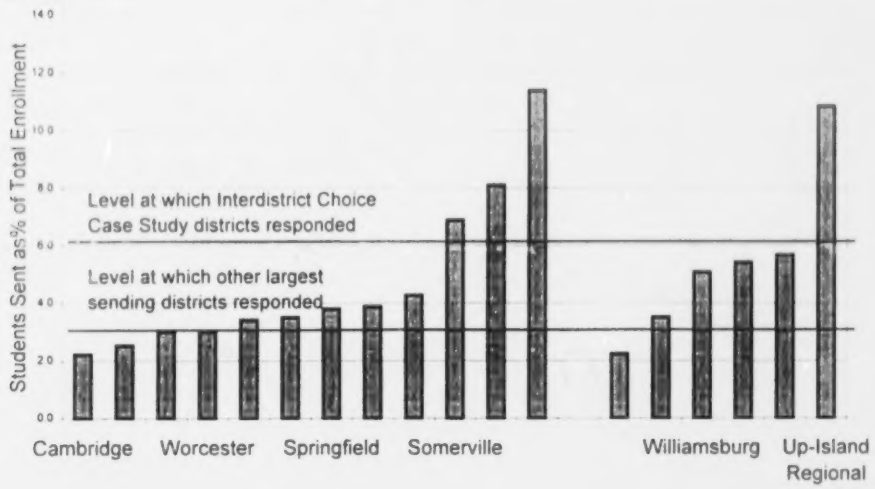


Figure 12 shows the losses of students as a percentage of total enrollment for the 12 charter school case study sending districts, as well as the six smaller districts. Included in this chart are lines that represent the two interdistrict choice loss thresholds of 6 percent of enrollment (for Change districts) and

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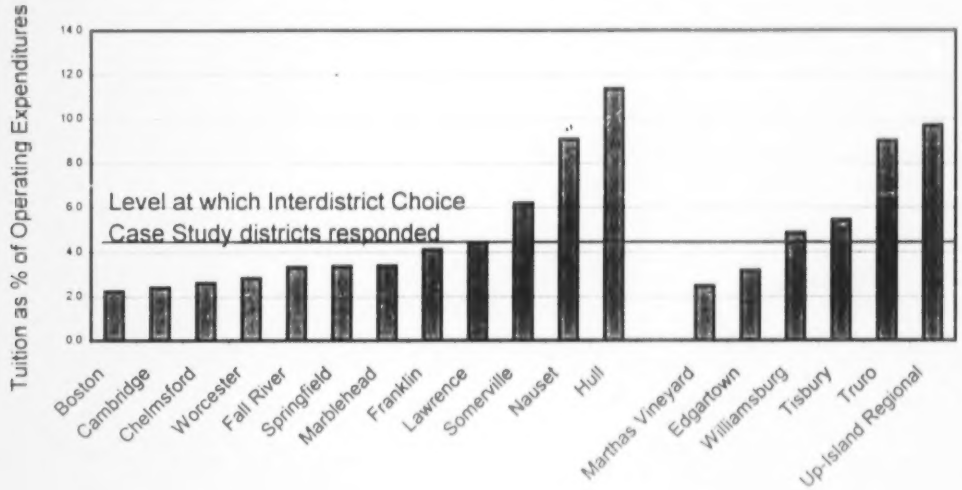
3 percent (for other large senders). Eight of the 12 districts experienced losses of students in 1997-98 that exceeded the 3 percent threshold, and three had losses beyond the 6 percent threshold. It is likely, therefore, based on the results of the interdistrict choice data, that Somerville, Nauset, and Hull would be candidates for changing their programs. Similarly, Fall River, Marblehead, Springfield, Franklin, and Lawrence are in the loss range of those districts that felt compelled to try to reverse their losses.

Of the smaller districts, included here because of their high relative rather than absolute losses, Up-Island Regional stands out as a district that will likely react to such a large loss of its student population, 11.3 percent. In addition, Williamsburg, Truro, and Tisbury are very close to the 6 percent threshold and therefore may also respond.

Figure 13. Charter School Tuition as a Percent of Operating Expenditures for Case Study Districts, 1997-98



More important than a loss of students to these districts is the loss of tuition dollars. The Armor/Peiser study determined that when the Change sending districts lost more than 4 percent of their operating expenditures to other districts they responded strongly the following year. Figure 13 shows the loss of state aid as a percentage of total operating expenditures for the charter school case study sending districts, as well as the smaller districts.

Somerville, Nauset, and Hull stand out as districts that have lost considerably more than the interdistrict loss threshold of 4 percent. Franklin and Lawrence are currently hovering right around the threshold. As the losses to these districts reach 10 percent or more of their budgets it is apparent that they will need to modify their programs to attract students. Of the smaller districts, Truro and Up-Island Regional have been especially hard hit. As outlying districts, they are more limited in their options. Suffice it to say for now that whether or not the charter school case study sending districts have begun to

put plans in place to compete with the charter schools, they are approaching the level of loss that caused interdistrict choice sending districts to respond.

VI. Conclusions and Policy Recommendations

Although interdistrict choice and charter schools are often viewed as similar programs that provide parents with public education options and that promote competition among public schools, this study has led to different sets of conclusions and policy recommendations for each program. The programs are being utilized by demographically different groups of parents and students, are growing at different rates, and have been in place in Massachusetts for different lengths of time. This last point, in particular, affects the market competition thesis.

Interdistrict Choice

When Pioneer Institute published the Armor/Peiser study of interdistrict choice in Massachusetts in 1997, the impact of the program on the Massachusetts public school system was already becoming clear. Although the students choosing to leave their home districts were by and large less minority and more affluent than the districts they left, the racial, social, and financial impact on these sending districts was relatively minor due to the small number of students leaving. On the other hand, the districts receiving these students were on average improving their racial compositions and receiving sufficient tuition from the choice students to make a difference in their programs. More importantly, the interdistrict choice case study used to test the market competition thesis revealed that the districts losing the highest numbers of students were responding strongly to the market pressure and making modifications to attract students, whether those they have lost or new students from other districts.

This update study has, for the most part, confirmed the findings of the initial study, indicating that, not only were those findings correct, they were reliable for predicting the direction interdistrict choice was heading. Although the racial impact on sending districts still remains negligible, the racial effects on some of the receiving districts are increasing. Avon, in particular, has doubled the percent of minorities in its enrollment due to interdistrict choice transfer students. In addition, there are proportionately more minority choice students in 1997-98 than was the case in 1994-95. This shows that more minorities are both becoming aware of and taking advantage of the interdistrict choice program.

The case study districts used to test the market competition thesis also continue to support the findings of the initial study. The Change senders that had begun to turn around their losses as of 1996 have since improved their positions even more dramatically, surpassing the No Effect senders and, in one

case, becoming a net receiver.[14] Similarly, the other large sending districts that lost more than 2 percent of their enrollment to interdistrict choice in 1994-95 have continued on the same trajectory of improvement and have reduced their losses.

One exception to the initial study has arisen that should be mentioned. The growth rate of the program, although not the absolute number of students, has slowed down significantly. This may be due in part to the launching of the charter school program and to capacity constraints in the receiving districts. Further research should be done to determine exactly what is limiting participation.

The policy recommendations of the Armor/Peiser study have, for the most part, not been adopted, and this is likely contributing to the slower growth of the program. Although transportation for low-income students is fully reimbursable, participation as a receiver and advertising are still not mandatory for all districts. In fact the number of receiving districts has not grown significantly over the past two years, and to date only about one-third of all districts participate as receivers. Restricting interdistrict choice to only the seats that are available in those 100 or so districts certainly limits student participation.

Lastly, from the financial data it is clear that only above foundation sending districts have experienced significant enough negative effects from the interdistrict choice program to seek to regain their market share. The equalization of spending among districts is nearly complete, and therefore it is now more important than ever that reimbursement of interdistrict choice tuition be discontinued. This would likely evoke more responsiveness by all districts to market pressures.

As recommended in the initial study, an assessment of all fixed and variable education costs should lead to a more accurate marginal cost of educating one student. This would then be the correct tuition to charge each sending district and give to each receiving district, in addition to a small, financial reward for attracting the student.

CHARTER SCHOOLS

The growth of participation in the charter school program, not to mention the waiting lists for most of the schools, indicates that this program is likely to have a more significant impact on Massachusetts than interdistrict choice. Critics of the program supposed that these schools would serve disproportionate numbers of wealthy, white students whose parents would see them as an opportunity to send their children to private schools without paying tuition. Instead, the Massachusetts charter schools are serving a student population that is more minority and lower income than the statewide student population. [15]

[14] According to the surveys done for the initial study, these Change districts view the interdistrict choice program positively as a mechanism that forced them to improve.

[15] See the summary of charter school profiles for the 1997-98 school year, published by the Pioneer Institute for Public Policy Research.

Because many of the districts sending the most students to charter schools have high concentrations of minority and low-income students, the loss of the students tends to increase racial diversity. Other than the high minority sending districts, the largest sending districts were predominantly white before charter schools and have transferred out predominantly white students. For these districts, such as Marblehead, Franklin, or Martha's Vineyard, race could not have been a factor in the parents' decisions.

Overall, there has been little racial or social impact from the charter school program. It should be noted, however, that the charter schools themselves attract concentrations of minorities. This is not being done by compulsion, certainly, but by choice. Consequently, the conclusion as to whether greater concentration of minorities is a negative or positive outcome may be subject to debate.

The more critical issue for purposes of an analysis of charter schools is the response of sending districts to the loss of tuition. Six Massachusetts school districts have lost more than 5 percent of their operating budgets to charter schools. If the interdistrict choice conclusions can be generalized to charter schools, then this should spur those districts into action. In some cases, particularly the small, geographically constrained districts such as Up-Island Regional and Truro, it may be very difficult to bring those students back or attract new ones.

Further study of the reaction of these districts, as well as the other highest sending districts, could determine if these districts behave as Change senders, No Effect senders, or No Change senders. The staggered opening of the schools by year suggests that a case study approach would be the most appropriate, requiring 3 to 5 years of financial data on each charter school and sending district for trend analysis. The more strict reporting requirements of charter schools should make these data easily obtainable. In addition, survey data regarding the opinions and reactions of the sending districts could provide useful information.

Overall, this update confirms that the Massachusetts school choice programs continue to benefit many while harming few. Further, those districts that experience a negative impact appear to be modifying their programs in order to stem their losses, a highly desirable consequence. As long as the benefits outweigh the costs, steps should be taken to ensure that all students have access to interdistrict choice and charter schools.

APPENDIX

August 23, 1999

Susan Aud
Pioneer Institute
85 Devonshire Street, 8th Floor
Boston, MA 02109

Dear Susan,

We have read your draft paper and are writing to offer our evaluation. Pioneer Institute's research continues to contribute to our understanding of school choice dynamics, particularly which families most often benefit. Pioneer's authors have been quite objective in documenting the inequities in which parents participate in largely unregulated open enrollment programs.

This paper provides a valuable update to data collected in the Armor/Peiser study examining school choice in Massachusetts. Your data analysis unfortunately repeats the flawed methodology of the previous analysis. On the other hand, the inclusion of the preliminary effects of the growing charter school movement in Massachusetts is a timely addition to the analysis and relevant to current discussions on school choice.

Your interpretations are grounded in data, which provide insufficient evidence to explain whether responses of districts participating in interdistrict choice are consistent with the market competition thesis. Your analysis relies on a substantial amount of district-level data which is useful in providing evidence of only general trends for your case study districts. Although trends indicate Change districts reacted consistently with the market competition thesis, a shift in the unit of analysis from district level to the school or family level is necessary to determine whether the observed effects are consistent with your conclusions. We detail this point below.

Unfair racial and social class effects

The data you present indicate that there is no organized en masse migration of white students from mostly minority *districts*. However, as we mentioned before, your analysis hovers around district-level data and overlooks more detailed and valuable *school* and *student*-level data. Also, Pioneer's earlier report showed that initial generations of participating families were overwhelmingly white and were leaving schools with concentrations of ethnic minority students, reversing the Commonwealth's painful progress in stemming white flight from urban schools.

We are all aware that disparities—academic program inequities, racial imbalances and fiscal inequities—are just as prevalent within as they are across districts. Although your data indicate that racial balances are not being significantly disturbed at the district level, your analysis fails to tell the reader what is occurring to racial balances within schools. The fact that white students compared to minority students are participating in the choice program at a significantly higher rate indicates that a closer look at school-level effects is necessary. By comparing only aggregate racial characteristics at a district level, we do not learn how choice students may be impacting the racial balance of both sending and receiving *schools*. For example, a district's net transfer rate of 2% which you describe as "quite small", may in fact be significant if you track whether such losses are in a few number of schools within the district.

You mention that "the purpose of comparison of SES and academic characteristics between the groups is to try and assess the predominant rationale behind a parent's decision to use interdistrict choice or charter schools." However, unlike the original study, this follow-up study does not provide new student and family-level data. Your general description of district poverty and academic characteristics fails to provide sufficient information about the students which choose to exit their neighborhood school. Providing aggregate date on free lunch enrollment and using 10th grade MCAS data as proxies for poverty

and student achievement does not provide any information about the individual students that are participating. Detailed information is essential to back-up the trends you describe, and without such your analysis never leaves the abstract aggregate level.

One of our primary concerns is that choice programs may exacerbate inequities that already exist. How do we know whether students that choose to leave their neighborhood school are actually performing at a higher rate in their new school? Which students are choosing to leave their neighborhood school, and what are the effects on those students that remain in the net sending schools? These are crucial questions that are not answered in your analysis, but which are the foundation in determining whether choice programs really are influencing positive change to the Commonwealth's public school system overall.

The previous study collected valuable student and family-level information indicating that choice students in the case study districts displayed higher academic achievement, held higher academic aspirations, are more affluent, and came from more educated households then their non-choice peers. This important information revealed stark differences among choice and non-choice students. Such information must be supplemented with comparative information about non-choice students that are left behind. What are their reasons for not choosing to participate and how is the quality of their schooling influenced as students transfer out of their schools? We do not take issue with public policies that reward committed parents to find better schools for their children. But does this unregulated open enrollment scheme fairly inform all parents, and can all parents equally afford search and transportation costs to participate?

Negative school effects

Similar to Pioneer's first report, your follow-up relies too heavily on a flawed method in gauging whether net sending districts are experiencing a fiscal crunch. The most troubling flaw is the use of the ratio of tuition loss/gain to a district's total operating expenditures as a proxy for fiscal impact. Such an approach relies on the dangerous assumption that all districts receive equal per-pupil funding (both basic aid, categorical and federal aid) and is blind to operating costs which are highly variable among districts according to tax bases and demographic characteristics. Unless districts are operating on an equal fiscal playing field, judging the degree of fiscal impact based on your definition of net losses is highly questionable.

We do feel that your estimations are a step in the right direction and partially illustrate the net fiscal impact on districts. However, your fiscal analysis should also include factors such as a district's student population, staffing ratios and cost, and other information which may provide a better picture of how money is utilized by different districts. A cost of living index which may explain regional differences in the buying power of a dollar is also a critical variable in a formula which illuminates a more precise picture of the fiscal impact of interdistrict choice.

In short, the Robin Hood in reverse effect is still occurring throughout the Commonwealth. As you explain in this and the prior report, fiscal losses are still concentrated in high poverty districts. Even though sending districts are reimbursed for tuition payments sent to receiving districts, high poverty sending districts still experience a loss in revenue. If we look simply at the absolute number of transfers, the evidence still indicates that more affluent districts are benefiting from an influx of incoming transfers—an indication that money is flowing from low income to higher income districts.

Market competition thesis

More thorough evidence is necessary in order to determine whether the organizational responses by Change districts are consistent with the market competition thesis. Although Change districts did reverse their trend of losing students, there is insufficient evidence to conclude that the regaining of "market share" is due to improvements in academic programs. The curious reversal for Change districts invites further examination of school and family-level data which may provide stronger evidence for your claims. Further investigation should attempt to answer the following questions: Did Change districts implement improvements in their academic program which lured students to their district, or did they

simply launch effective public relations campaigns? How are students faring academically in Change districts that have failed to stem-out migration? How are students left behind faring in comparison to students who have opted to transfer?

The bottom line

If Change districts are indeed responding to enrollment losses by strengthening their academic programs, then we should observe marked gains in average achievement for students in Change districts. If transferring students are finding stronger academic programs, then their achievement should rise (both in charter schools and interdistrict choice schools). Your report provides no evidence to support that either of these predicted results of school choice is occurring. The inconclusive nature of your data begs for more evidence to substantiate your claims.

Lastly, any future examination should include longitudinal tracking of students participating in school choice and those left behind. Tracking such students is necessary if we are going to understand both the motivations for families who choose and the long term effects of the open enrollment program.

Sincerely,

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No. 8, "Index of Economic Opportunity for Boston" forthcoming, October 1999.

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No. 6, "Competition in Education: A 1999 Update of Interdistrict Choice" by Susan L. Aud, September 1999.

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